

## **STRUCTURAL NOISE PREDICTOR**

### **ABSTRACT OF THE DISCLOSURE**

A method and system for determining locations in a design of an assembly likely to result in buzz, rattle, squeak ("BSR"), and/or other noise conditions. The invention uses a finite element model to represent a design. BSR effects are predicted based upon analysis performed on multiple design models. Users may engage in real-time "what if" analyses to determine the effects of various design and component changes on noise source characteristics. Additional intelligence may be applied to limit the number of model points subject to evaluation. Displacements, contact velocities, and force responses at selectively identified subsets of interesting points can evaluate noise characteristics. An "as designed" model may evaluate noise source characteristics at the beginning of the life of an assembly. Degraded models can determine the effects of aging and use. A restored model may evaluate the influence of optimal fastener design on BSR characteristics for assembly resulting from fastener degradation.

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